



Reducing Non-Medical Deliveries Before 39 Weeks Gestation

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Eliminating Elective Deliveries Before 39 Weeks

ACOG Practice Bulletin: Clinical management guidelines for obstetrician-gynecologists. 1999; (10). Replaces Technical Bulletin 1995; (217).



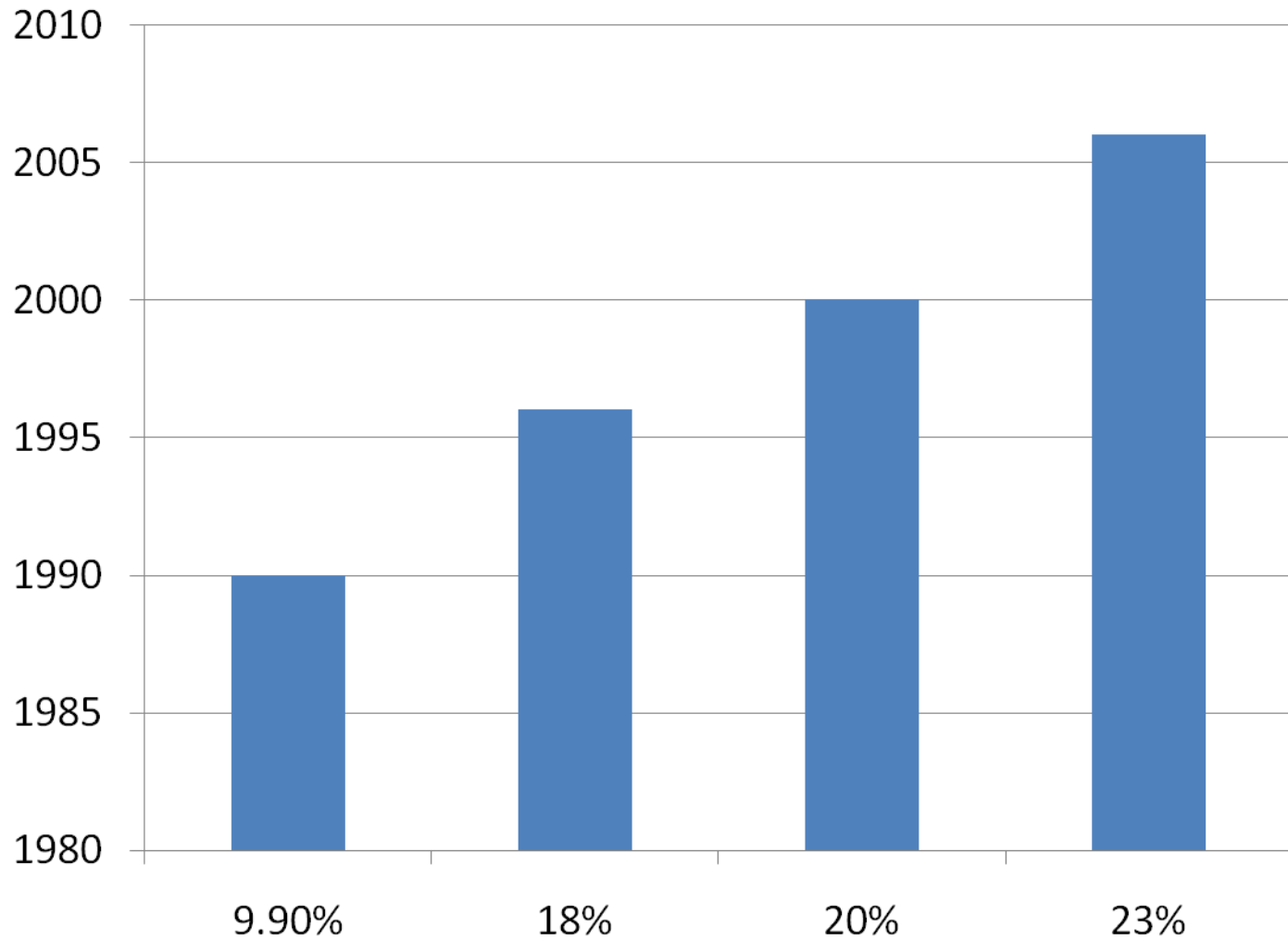
Rate of Induction

- Rate rising nationally
- Wide variation between states
- Wide variation within states

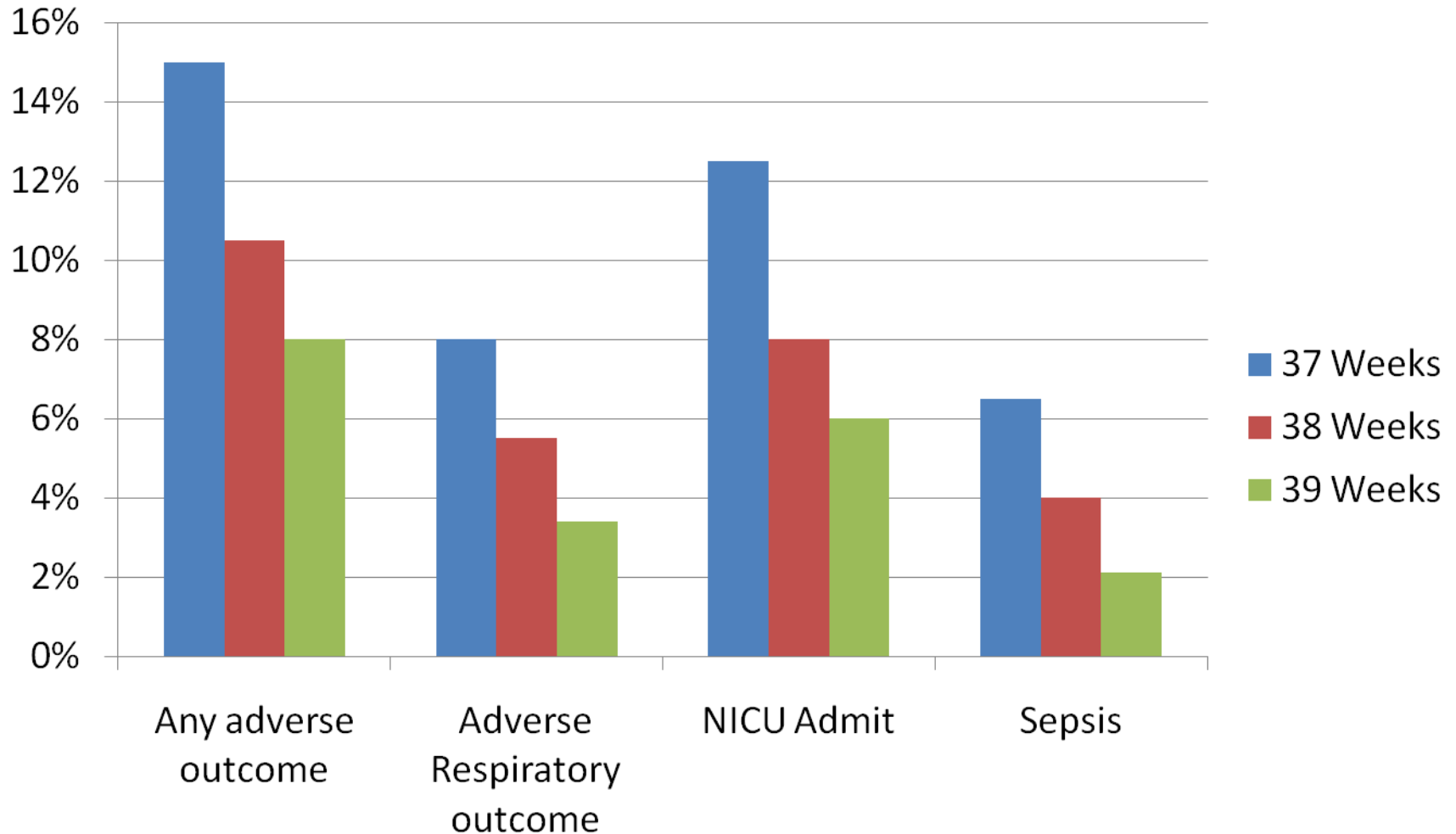


Rayburn WF, Zhang J. Rising rates of labor induction. *Obstet Gynecol.* 2002

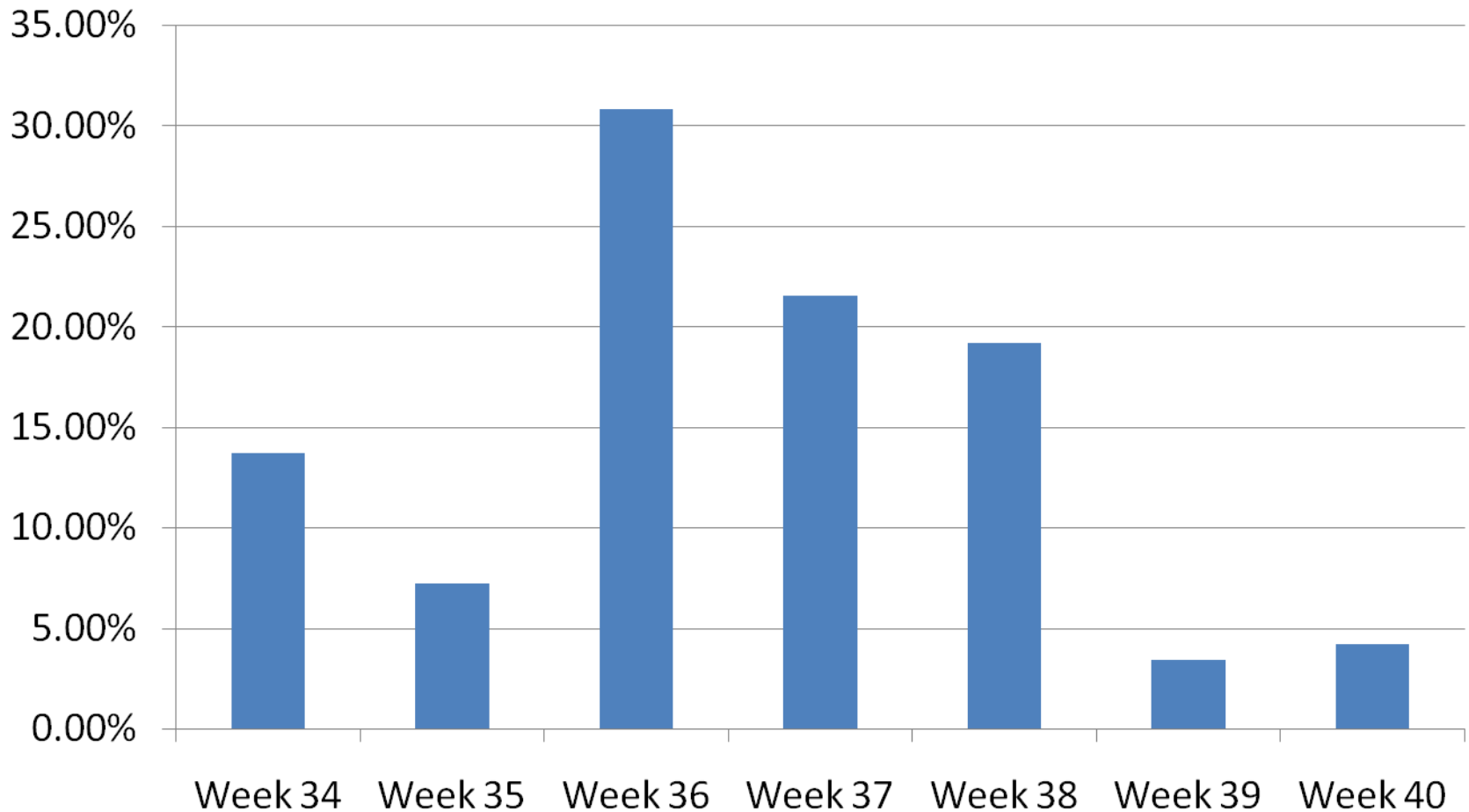
Rise in Induction of Labor in US 1990-2006



Complication Rates, Scheduled Repeat Cesareans by Weeks of Gestation



Gestational Age That Women Consider it Safe to Deliver



Advocates for Elimination of Elective Deliveries Before 39 Weeks

- **Institute for Healthcare Improvement (IHI)**
- **Joint Commission**
- **March of Dimes**
- **Leapfrog group**
- **State Quality Initiatives (LA, CA, MI, UT, ID, NY)**
- **Several health plans (Cigna, Wellpoint, United Healthcare, Blue Cross)**

Institute for Healthcare Improvement (IHI)

Perinatal Bundle - Elective Induction Bundle
Composite, Data Collection Tool



Joint Commission Core Measure

- **Measure Set:** [Perinatal Care\(PC\)](#)
- **Set Measure ID:** PC-01
- **Performance Measure Name:** Elective Delivery
- **Description:** Patients with elective vaginal deliveries or elective cesarean sections at ≥ 37 and < 39 weeks of gestation



March of Dimes Toolkit

- Making the Case: A literature review
- Data Collection and Quality Improvement
- Clinician and Patient Education:

[http://cmqcc.org/ 39 week toolkit](http://cmqcc.org/39_week_toolkit)



The Leapfrog Group



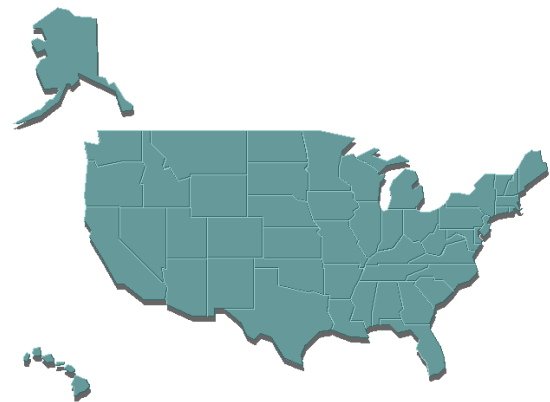
- Target rate for elective deliveries before 39 weeks: 12% in 2010...
- Future goal: 5%

Leapfrog: Hospital Rates of Early Scheduled Deliveries

You can look up reporting hospital rates in your state by going to

<http://www.leapfroggroup.org/tooearlydeliveries>

Then click on your state



Rates of prior to 39 week inductions vary widely (0-67%)

| Hospital | State | Rate |
|--------------------|-------|------|
| South Miami | FL | 67% |
| Cleveland Clinic | OH | 30% |
| Brigham and Womens | MA | 27% |
| Cedars Sinai | CA | 17% |

| Hospital | State | Rate |
|-------------|-------|------|
| Mayo Clinic | MN | 12% |
| Vanderbilt | TN | 12% |
| Baylor | TX | 5% |
| Henry Ford | MI | 0.4% |

Louisiana Rates

| Hospital | City | Rate |
|---------------------|------------------|-------|
| Baton Rouge General | Baton Rouge, La. | 0.0% |
| Tulane Lakeside | Metairie, La. | 1.9% |
| Dauterive | New Iberia, La. | 5.2% |
| Lakeview Regional | Covington, La. | 45.9% |
| Rapides Regional | Alexandria, La. | 54.0% |

State Initiatives: the Louisiana Department of Health & Hospitals Birth Outcomes Project



Medical Factors



Factors in Increased Inductions

1. FDA approved cervical ripeners
2. More locally accepted marginal indications
3. Patient or physician preference
4. Accepted risk of cesarean section



More Factors in Increased Inductions

- 5. Physician convenience
- 6. Litigation concerns
- 7. A high intervention culture in medicine



Rayburn WF, et al. Ob Gyn July 2002
The Leapfrog Group

Medical Indications for Elective Delivery

- Placental abruption
- Chorioamnionitis
- Fetal demise
- Gestational Hypertension
- Preeclampsia, eclampsia
- Premature rupture of membranes
- Post term pregnancy
- Maternal medical conditions
- Fetal compromise

ACOG Practice Bulletin No. 55

ACOG Practice Bulletin No. 107

Contraindications to Elective Vaginal Delivery

- Vasa previa or complete placenta previa
- Transverse fetal lie
- Umbilical cord prolapse
- Previous classical cesarean delivery
- Active genital herpes infection
- Previous myomectomy entering the endometrial cavity

ACOG Practice Bulletin No. 107

Non-Medical Indications for Elective Delivery (≥ 39 weeks)

- Risk of rapid labor
- Distance from hospital
- Spousal Tour of Duty
- Psycho-social events



Controversial Indications for Induction of Labor

- Suspected Fetal Macrosomia
- Prior Shoulder Dystocia
- Isolated Oligohydramnios

ACOG Practice Bulletin No. 22
ACOG Practice Bulletin No. 101

ACOG Criteria for Term Gestation

- Ultrasound dating at <20 weeks supports gestational age \geq 39 weeks
- FHT's documented present for 20 weeks by fetoscope or 30 weeks by Doppler
- 36 weeks since positive serum or urine HCG pregnancy test by a reliable lab

ACOG, Induction of labor, Practice Bulletin
No. 107, Obstet Gyn 2009.



Determining Gestational Age

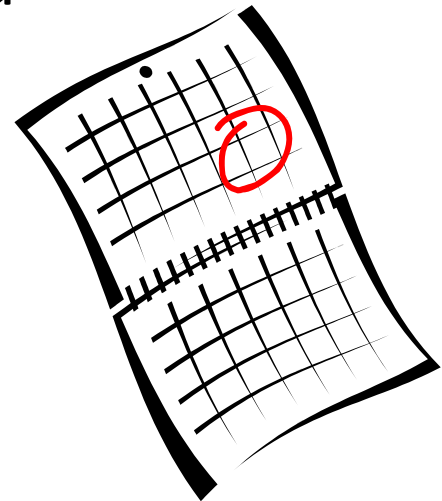
- When an elective delivery is contemplated, the gestational age of the fetus must be determined and confirmed
- Iatrogenic prematurity is unacceptable



Determining Gestational Age (con't)

Last Menstrual Period (LMP)

- Known and Documented
- Regular cycles
- Not artificially induced



Determining Gestational Age (con't)

Ultrasonography

Best early, 6- 12 weeks

Gestational sac size –
unreliable (ectopic?)



Crown-rump length –
more precise

Second trimester , 16-20
weeks – accurate
estimate, fetal anatomy
survey

Preference over LMP

Determining Gestational Age (con't)

Once established, the gestational dating should not be changed.



Determining Gestational Age (con't)

In Vitro Fertilization

Fertilization date same as ovulation date

Or ... Age of embryo at transfer



Determining Gestational Age (con't)

Fetal Lung Maturity \neq Fetal Maturity



ACOG Practice Bulletin No. 107
ACOG Practice Bulletin No. 97

Adverse Outcomes, Maternal

- ↑ risk of cesarean section
- ↑ probability of repeat cesarean section
- ↑ length of labor
- ↑ length of hospital stay
- ↑ risk of hysterectomy

Clark SL et al. Neonatal and maternal outcomes...Am J Obstet Gynecol 2009

Glantz JC Term Labor Induction...Obstet Gynecol 2010

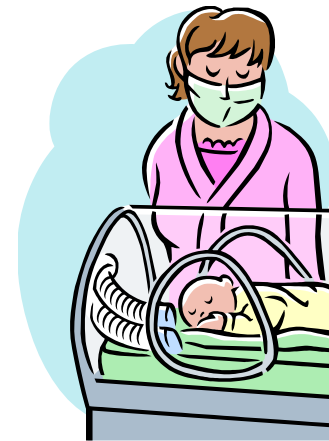
ACOG Practice Bulletin No. 7

Bailit JL et al; Maternal and neonatal outcomes...Am J Obstet Gynecol 2010

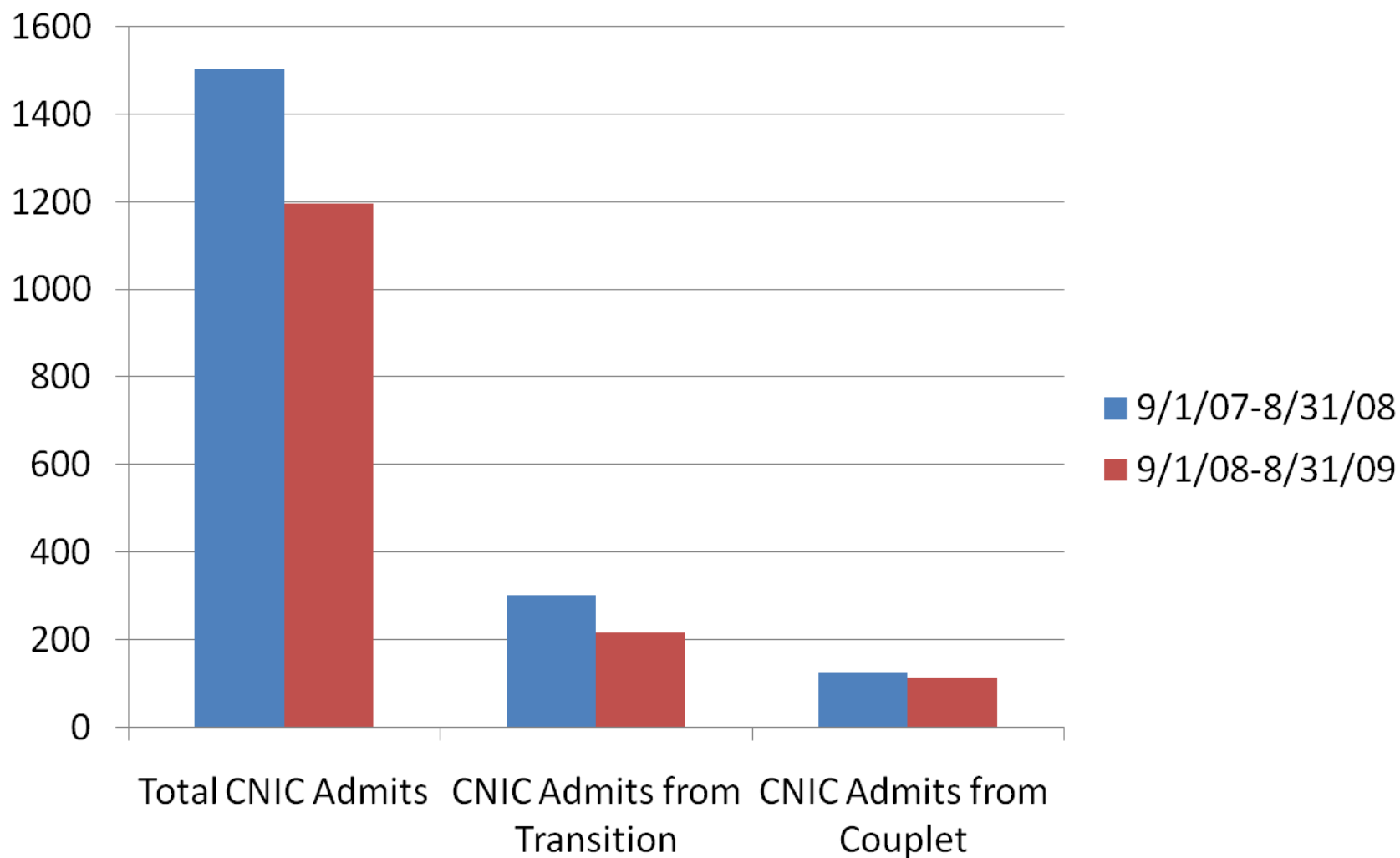
Adverse Outcomes, Neonatal

- ↑ NICU Admissions
- ↑ incidence of Respiratory Distress syndrome
- ↑ risk of intraventricular hemorrhage
- ↑ risk of necrotizing enterocolitis

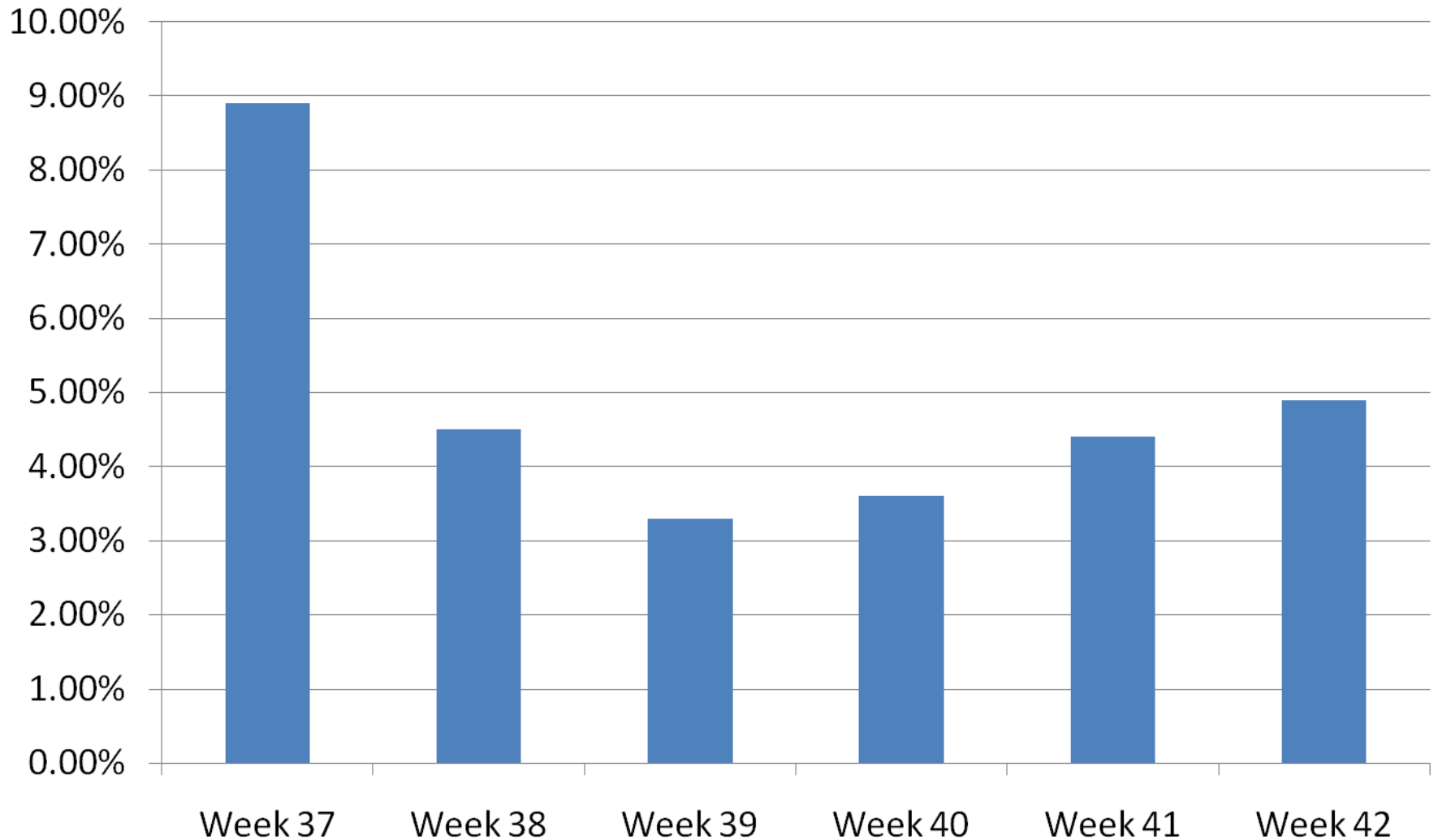
ACOG Practice Bulletin No. 97
Bates ED et al. Am J Obstet Gynecol, 2009.



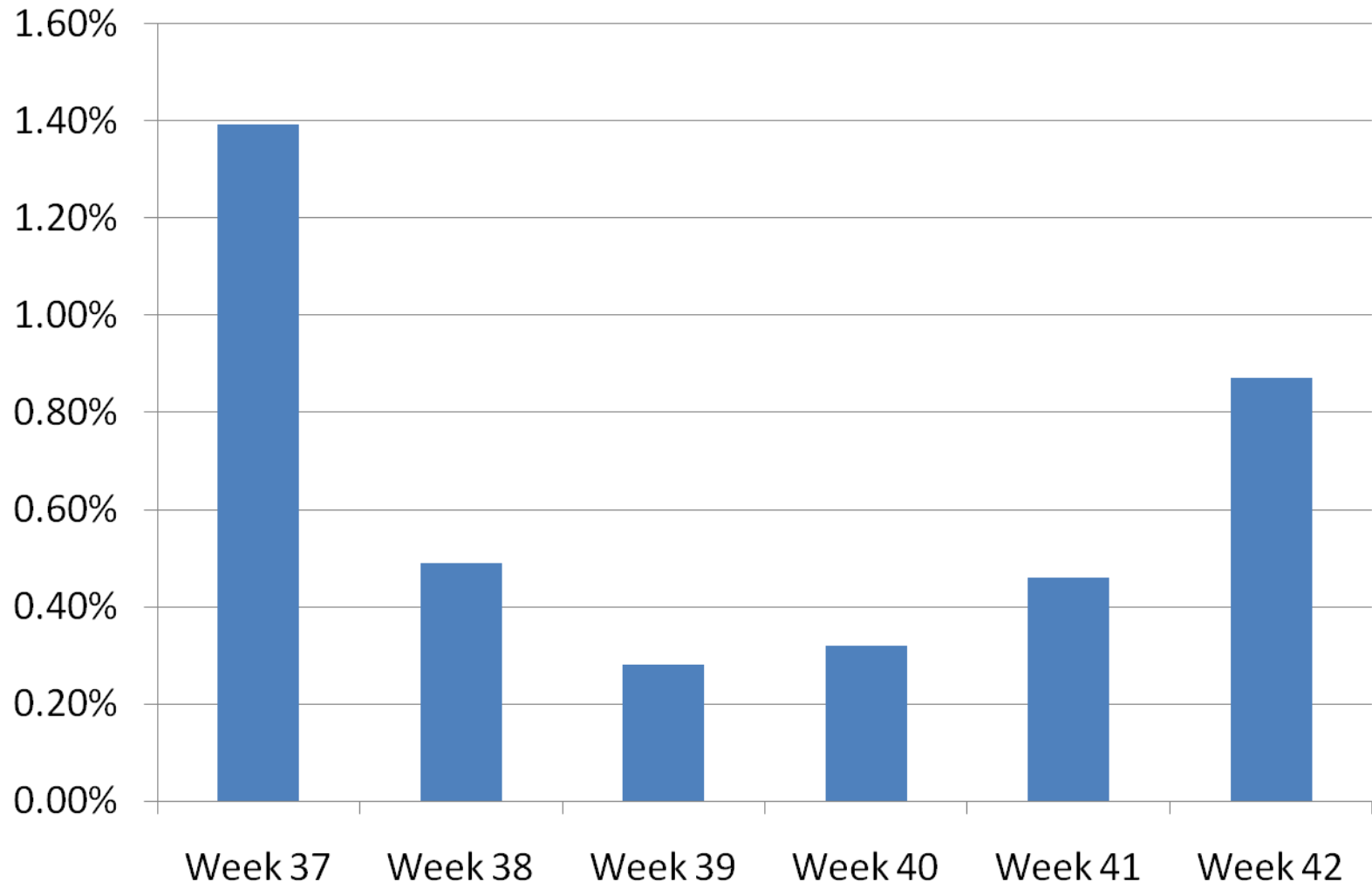
CNIC Admissions Before & After Womans Hospital, Baton Rouge



NICU Admits by Week of Gestation, Intermountain Healthcare



Ventilator Use by Weeks of Gestation, Intermountain



QI Initiatives to Reduce Elective Inductions Before 39 Weeks

- Intermountain Healthcare – Utah and Idaho
- Magee-Womens Hospital – Pittsburgh, PA
- Ohio Perinatal Quality Collaborative



Intermountain QI Project

QI Intervention:

- Multidisciplinary team
- Guidelines adopted
- Physician education
- Data collection
- Patient Education
- Consent Forms



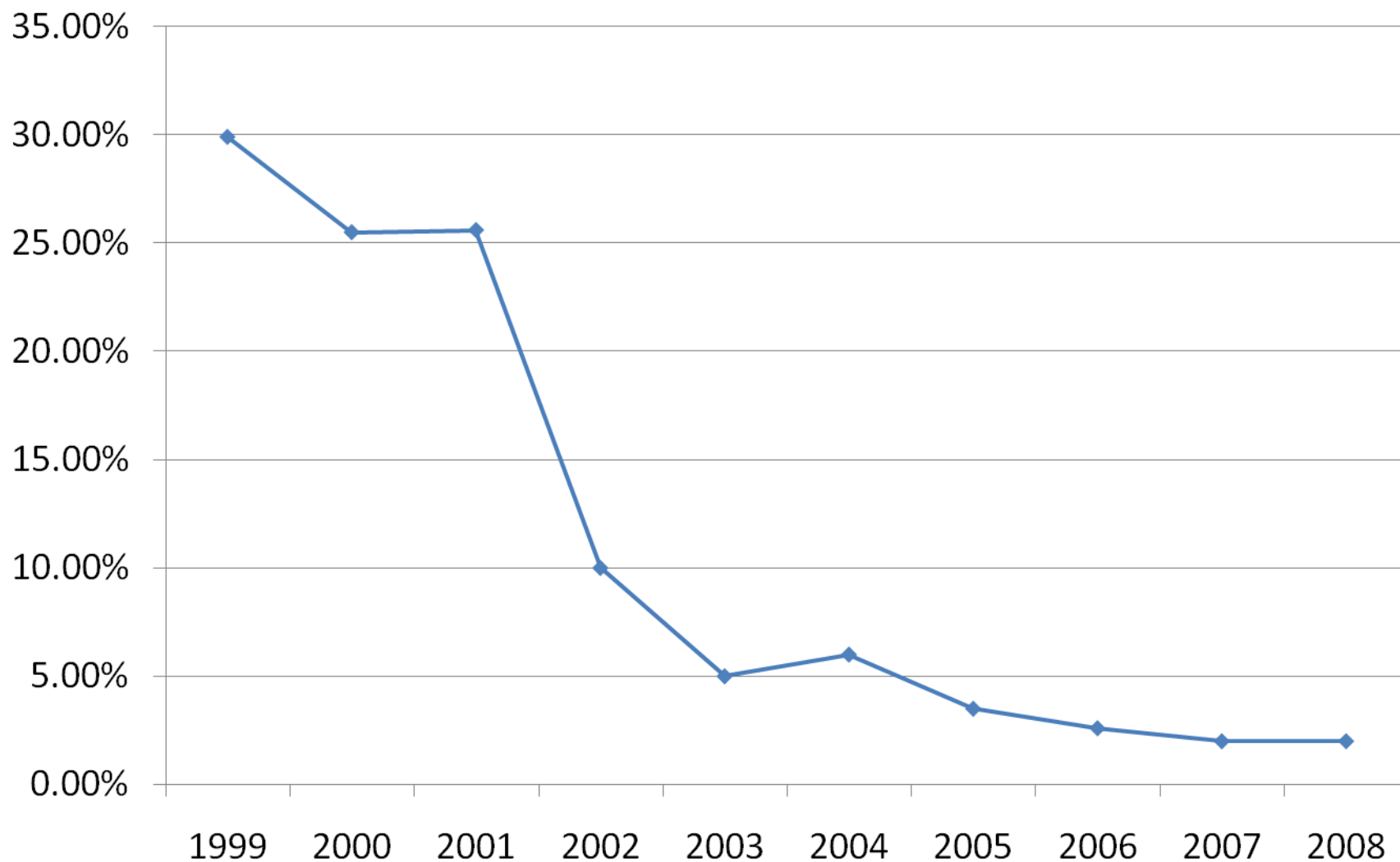
Oshiro BT et al. Decreasing elective deliveries before 39 weeks of gestation in an integrated health care system. *Obstet Gynecol.* 2009

Intermountain QI Project

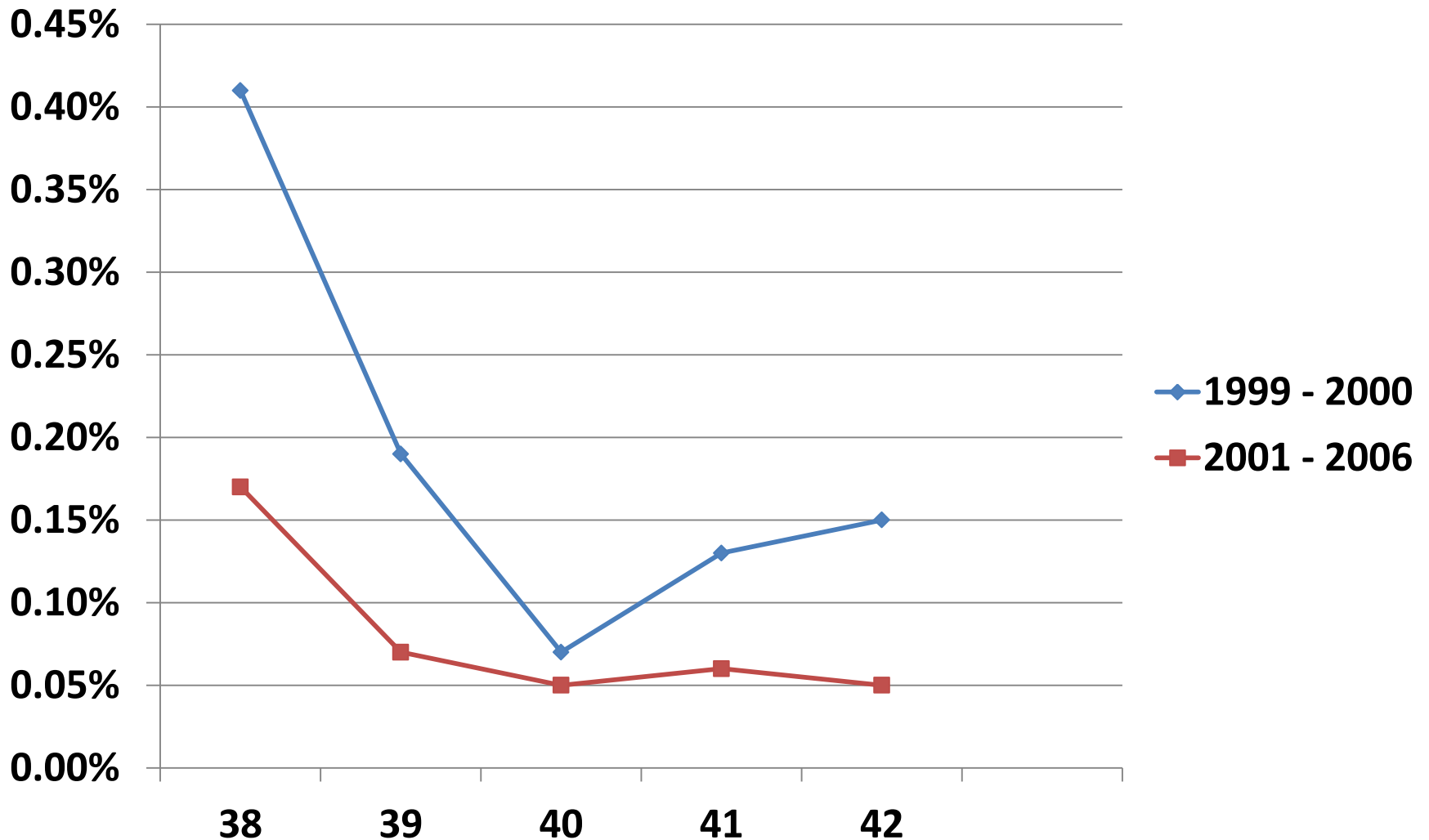


- Gatekeepers of scheduled admits: department chairs, perinatologists
- Guideline: “Delivery, whether by induction or C-section, should be electively undertaken ONLY after 39 weeks gestation, regardless of fetal lung maturity testing, and after both the mother and fetus have been examined thoroughly ... and the patient has given consent”
- Individual and institution rates reported

% of All Elective Births Occurring Before 39 Weeks (Intermountain)



Intermountain Stillbirth Data Before & After

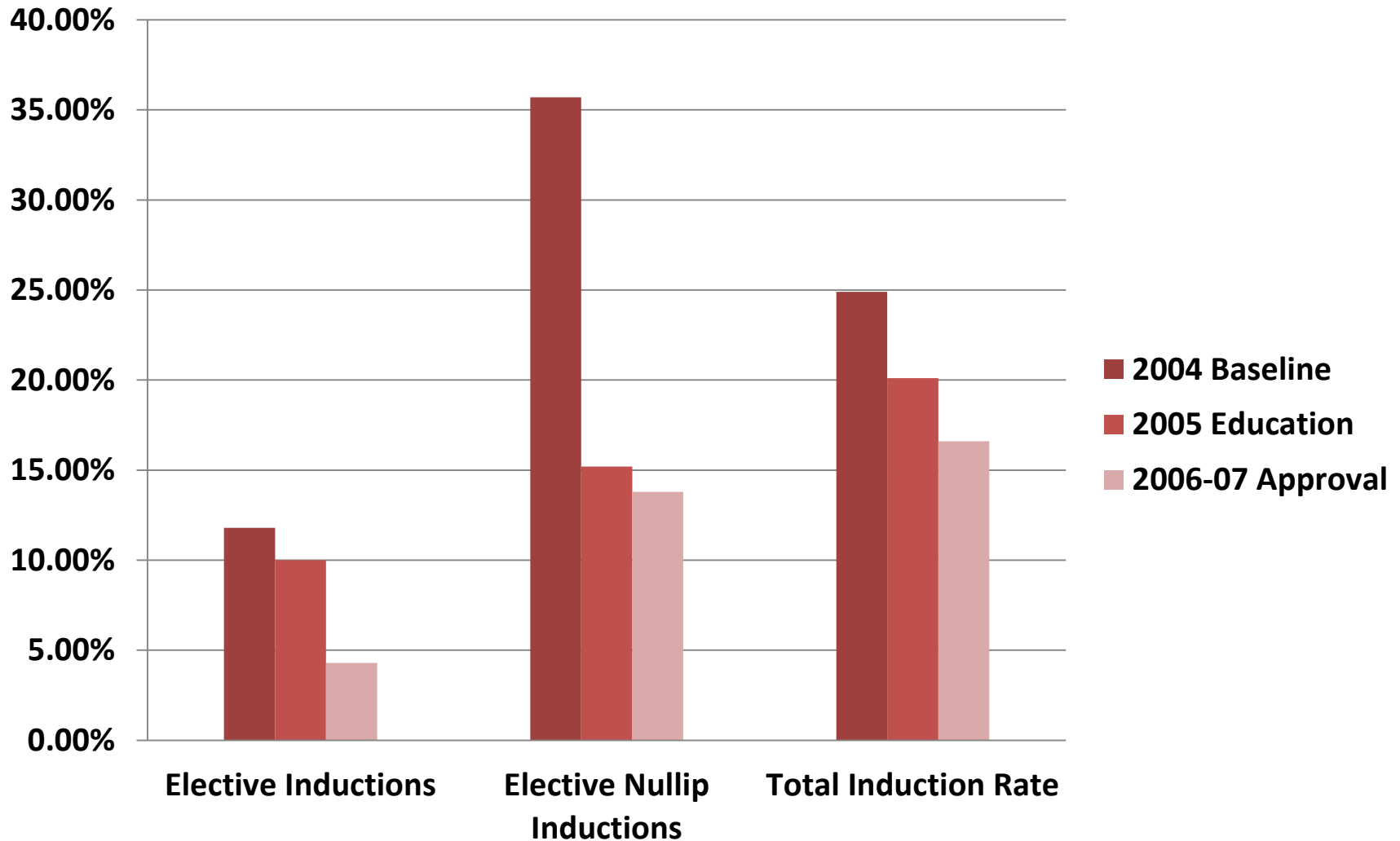


Magee-Womens Hospital UPMC



Fisch JM et al. Labor induction process improvement: a patient quality of care initiative. *Obstet Gynecol.* 2009

Magee QI Project: Reduction of Induction Rates

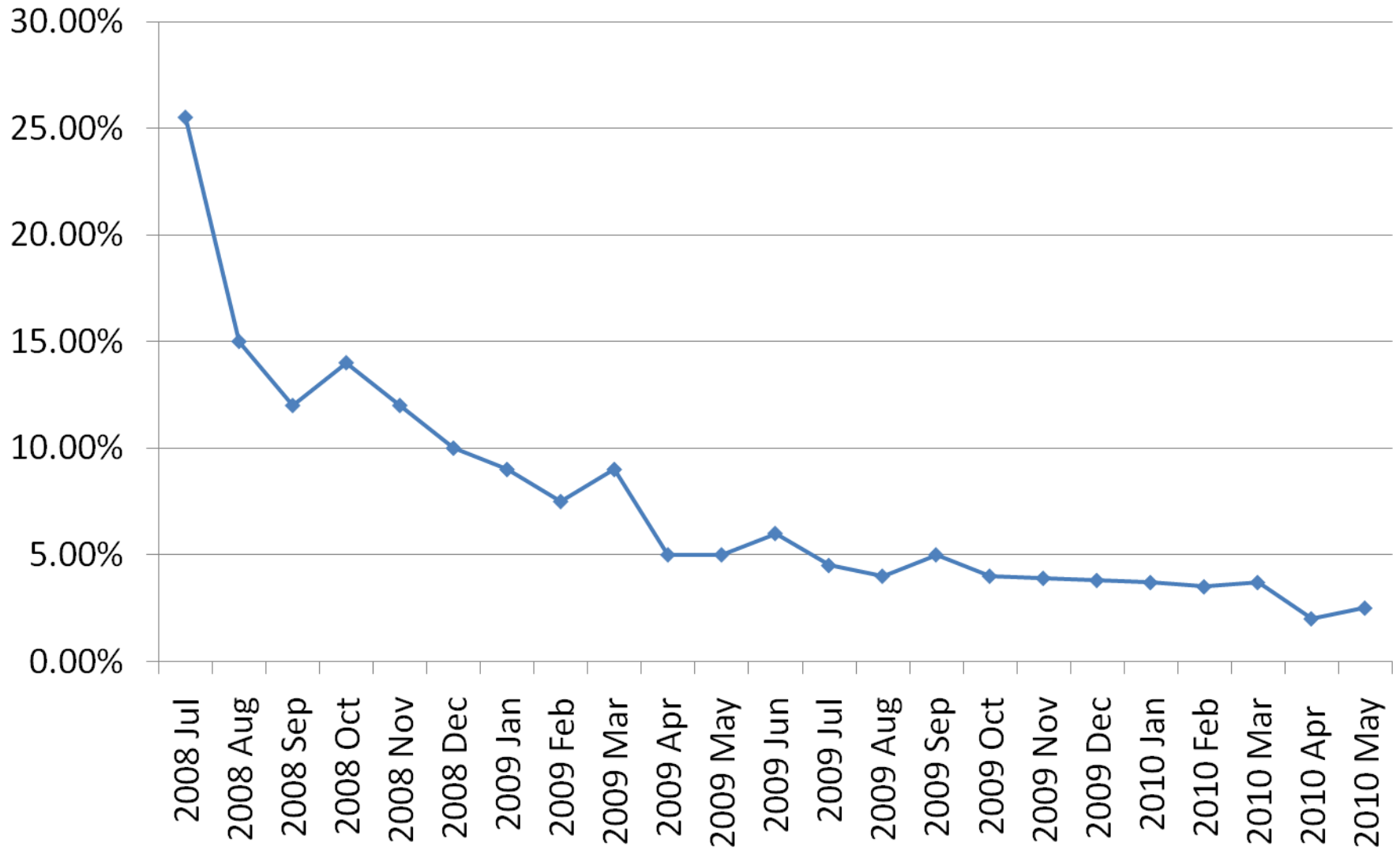


Ohio Perinatal Quality Collaborative

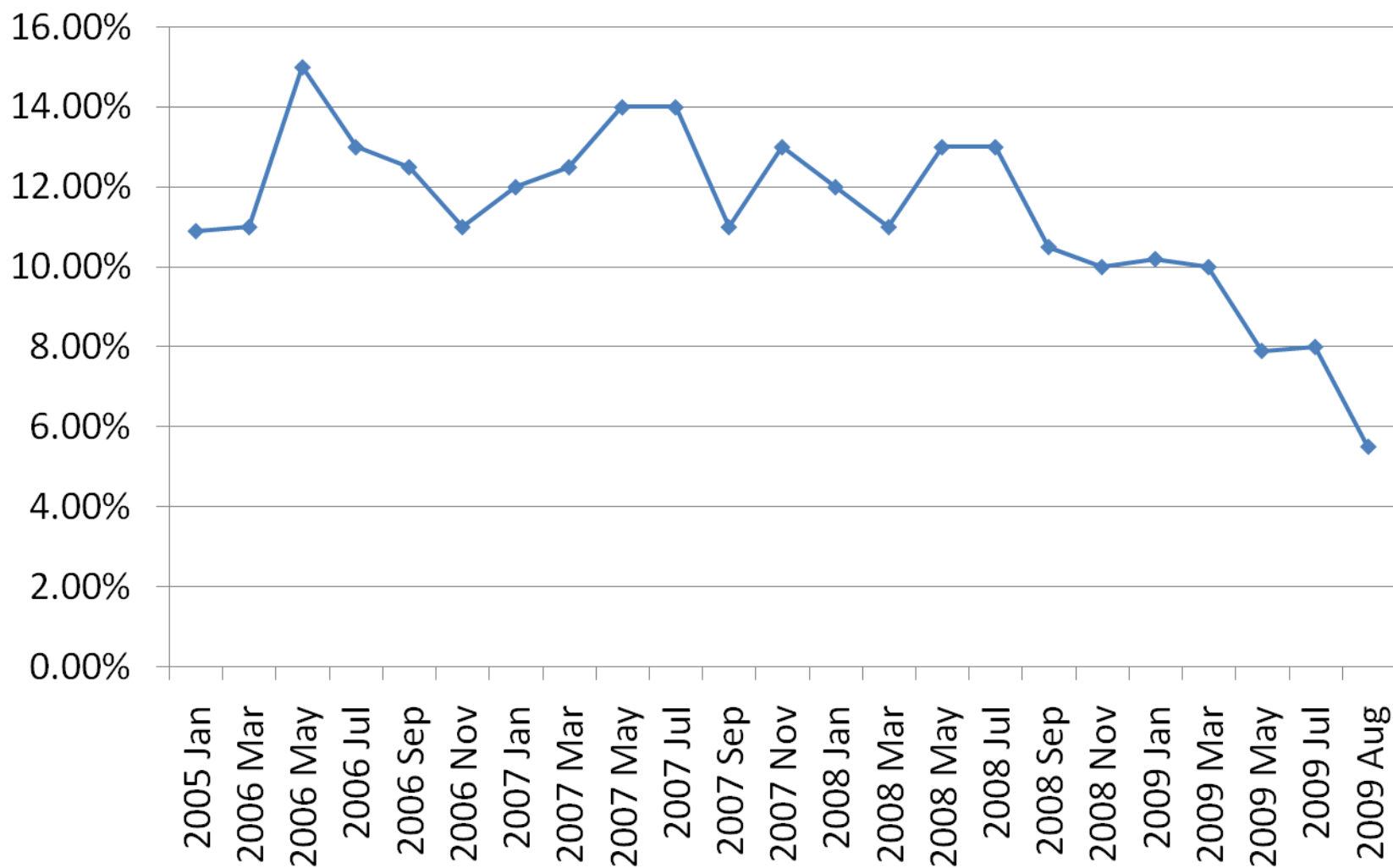


Iams J, Donovan E. Percent of Ohio births at 36-38 weeks. March of Dimes Big 5 Data Driven QI webinar, 2009.

% Scheduled Deliveries 36-38 Weeks without indication



% births 36-38 weeks induced without indication



Patient Education, March of Dimes excerpt



Here's why your baby needs 39 weeks:

- **Important organs**, like the brain, lungs and liver, get all the time they need to develop.
- It will be less likely your baby will have **vision and hearing** problems after birth.
- Babies need time to **gain more weight** in the womb. Babies born at a healthy weight have an easier time **staying warm** than babies born too small.
- Babies do better with feeding . Babies born early sometimes can't **suck swallow and stay awake**.

Patient Education Resources



- March of Dimes bilingual booklet “Why the Last Weeks of Pregnancy Count”
- March of Dimes Late Preterm Brain Development Card, www.marchofdimes.com
- Healthy Babies are Worth the Wait® Toolkit for Community Partners
www.prematurityprevention.org/professionals.html
- Let Labor Begin on Its Own. www.lamaze.org/
- Thinking About Inducing Your Labor: A Guide for Pregnant Women www.effectivehealthcare.ahrq.gov/

Clark 2010 Study: 3 Methods

27 HCA hospitals in 14 states

- »Hard Stop
- »Soft Stop
- »No Stop



Clark SL et al. Reduction in elective delivery ... Am J Obstet Gynecol 2010.

Clark Study Outcomes

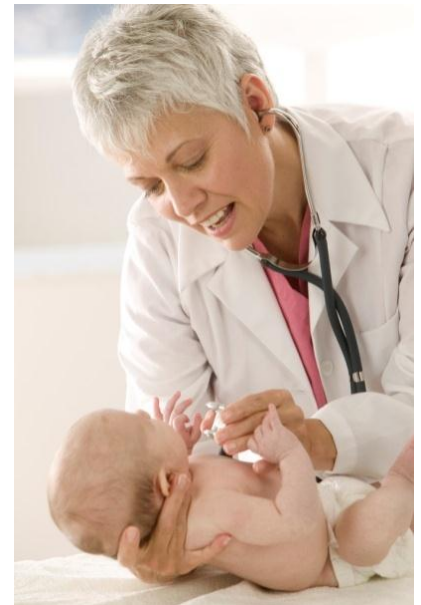
- 55% reduction in elective early deliveries (from 9.6% to 4.3%)
- 16% decline in NICU admissions overall
- Stillbirths unchanged
- Hard Stop achieved greatest reduction, then Soft Stop, then No Stop
- 1.7% rate achievable with Hard Stop

Common Elements of Successful Programs to Reduce the Rates

- Define terms/guidelines
- Multidisciplinary teams, collaborative projects
- Measure baseline, collect data
- Physician buy-in
- Education for staff
- Education tools, consent forms for patients
- “Hard stop” admissions versus voluntary

Hidden Cost to Healthcare System

1. Over scheduling in labor and delivery
2. Longer time in labor and delivery
3. Increase primary cesarean rate
4. Additional nursing time



Hidden Costs, continued

- 5. Longer length of hospital stay
- 6. Increased risk of downstream morbidity
- 7. Increased risk of litigation



Rayburn WF et al. Rising rates of labor induction...ACOG Obstet Gynecol, 2002.

Mello MM et al. National costs of the medical liability...Health Affairs 2010.

Claims Profile: Elective Induction prior to 39 weeks

- Labor induced, baby delivered at **38 weeks 4 days**
- Soon after delivery, respiratory distress
- 17 days NICU
- Malpractice claim followed



Tex. App.-Austin, 2003, Mauzey vs. Sutliff, 125 S.W.3d 71

Compliance with Clinical Pathways

- Noncompliance with an institution's OB clinical pathways was over 3 x more common for deliveries associated with malpractice claims than those that were not (43% vs. 12%).
- In 79% of the OB malpractice claims involving noncompliance with pathways, **the main allegation in the claim** related directly to the departure from the pathway.

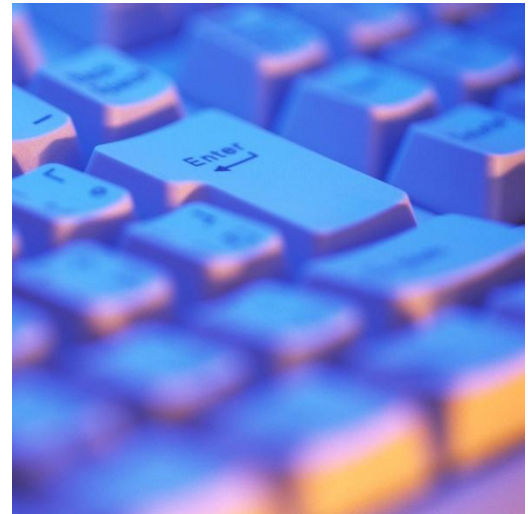
-- Ransom SB et. al. Reduced medicolegal risk by compliance with obstetric clinical pathways. Obstet & Gynecology 2003.

Guidelines and Pathways/Protocols

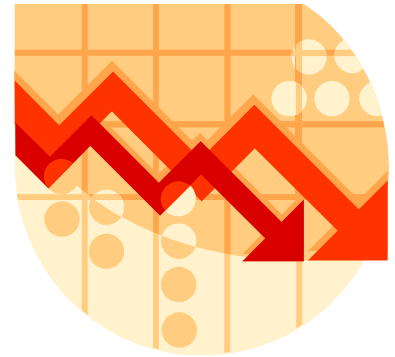
Guidelines are guidelines

- Not hard and fast rules
- Not one size fits all

If you depart from established guidelines, document your rationale



Adverse Outcomes and Claims



Rand Corp. study: adverse patient outcomes and claims rise and fall together

Deliveries before 39 weeks are associated with
↑ rate of adverse events

∴ By reducing these deliveries, both adverse outcomes and claims will decline

Greenberg, MD et al. Is Better Patient Safety Associated with Less Malpractice Activity? Evidence from California. RAND Corporation, 2010.

Conclusions



- Evidence is consistent that elective inductions prior to 39 weeks increases risk of harm
- Guidelines well established for decades
- Many stakeholders, many collaborative projects aim to reduce or eliminate non-medically indicated deliveries before 39 weeks

Conclusions



- Physician buy-in, ownership, leadership
- Physician champions needed